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NOTICE OF ALLOWANCE AND FEE(S) DUE

27975 7590 07/17/2008

ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A.
1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE
P.O. BOX 3791
ORLANDO, FL 32802-3791

EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 07/17/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,753

12/08/2003

R. Brent Saunders

70426

4480

TITLE OF INVENTION: RADIO COMMUNICATION SYSTEM EMPLOYING SPECTRAL REUSE TRANSCEIVERS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$300	\$0	\$1020	10/17/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

27975 7590 07/17/2008

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,753 12/08/2003 R. Brent Saunders 70426 4480

TITLE OF INVENTION: RADIO COMMUNICATION SYSTEM EMPLOYING SPECTRAL REUSE TRANSCEIVERS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional YES \$720 \$300 \$0 \$1020 10/17/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
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JAIN, RAJ K 2616 370-395210

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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Date _____

Typed or printed name _____

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/730,753	12/08/2003	R. Brent Saunders	70426	4480
27975	7590	07/17/2008	EXAMINER	
ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791			JAIN, RAJ K	
			ART UNIT	PAPER NUMBER
			2616	
			DATE MAILED: 07/17/2008	

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 840 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 840 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/730,753

Examiner

RAJ K. JAIN

Applicant(s)

SAUNDERS ET AL.

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/6/08.
2. ☒ The allowed claim(s) is/are 1,2,5,6,8-12,14-18 and 20-23 renumbered 1-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other ____. |

DETAILED ACTION
EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Richard Warther (407-841-2330) June 26, 2008.

Cancel claims 7, 13 and 19.

Amend the following claims;

I. (CURRENTLY AMENDED) A method of conducting communications between respective transceivers of a communication network using a selected portion of a prescribed communication bandwidth containing a plurality of sub-bandwidth communication channels, said method comprising the steps of:

(a) monitoring said prescribed communication bandwidth for the presence of communication activity on said sub- bandwidth communication channels, and identifying those ones of said sub-bandwidth communication channels which are absent communication activity as clear channels available for use by said respective transceivers; and

(b) causing said respective transceivers to conduct communications therebetween using selected ones of said clear channels identified in step (a) and processing identifications of clear channels within a modulated filter bank containing an inverse fast Fourier transform operator and a polyphase filter, and deriving therefrom a plurality of carrier frequencies respectively corresponding to said selected ones of said clear channels; ~~and processing identifications of clear channels within a modulated filter bank to derive carrier frequencies corresponding to selected ones of clear channels.~~

wherein said communication network contains a master site transceiver and a plurality of remote site transceivers, and wherein communications within said network are between said master site transceiver and said remote site transceivers; and

wherein step (a) comprises the steps of: (a1) causing said master site transceiver to transmit a prescribed message that is detectable by each of said remote site transceivers and, in response to said prescribed message, causing each remote site transceiver to monitor said prescribed communication bandwidth for effective communication activity on said sub-bandwidth communication channels, and to identify which of said sub-bandwidth communication channels appear to said each remote site transceiver to be absent effective communication activity and thereby constitute clear channels available for use,

(a2) causing each remote site transceiver to transmit to said master site transceiver a message identifying clear channels identified thereby in step (a1), and

(a3) causing said master site transceiver to broadcast to each of said remote site transceivers a communication control message containing an aggregate identification of clear channels based upon clear channel identifying messages transmitted by said remote site transceivers to said master site transceiver in step (a2).

8. (currently amended) The method according to claim 7 ~~1~~, wherein step (b) comprises causing said transceivers to conduct communications therebetween by using differential quadrature phase shift keying modulation of sequential ones of respectively different ones of said clear channels identified in step (a).

9. (Currently amended) The method according to claim 1, wherein said prescribed communication bandwidth is ~~the~~ a 217 to 220 MHz band, and wherein a respective sub-bandwidth communication channel is a 6.25 KHz wide channel.

10. (currently amended) A system for conducting communications between respective sites of a communication network using a selected portion of a prescribed communication bandwidth containing a plurality of sub-bandwidth communication channels, said system comprising:

a master site transceiver and a plurality of remote site transceivers, each remote site transceiver being operative to monitor said prescribed communication bandwidth for the presence of communication activity on said sub-bandwidth communication channels, and to inform said master site transceiver which of said sub-bandwidth communication channels are absent communication activity and therefore constitute clear channels available for use by said ~~communication~~ system; wherein each of said master site transceiver and said remote site transceivers is operative to couple identifications of selected ones of said clear channels to a modulated filter bank containing an inverse fast Fourier transform operator and a polyphase filter so as to derive therefrom a plurality of carrier frequencies respectively corresponding to said selected ones of said clear channels and a modulated filter bank through which identifications of clear channels are processed to derive carrier frequencies corresponding to selected ones of clear channels;

said master site transceiver being operative to compile an aggregate list of clear channels identified by said plurality of remote site transceivers and to transmit a message to said plurality of remote site transceivers containing information representative of said aggregate list of clear channels; and

wherein said master site transceiver and a remote site transceiver are operative to conduct communications therebetween using said selected ones of said clear channels contained in said aggregate list.

15. (currently amended) The system according to claim 10, wherein said prescribed communication bandwidth is ~~the~~ a 217 to 220 MHz band, and wherein a respective sub-bandwidth communication channel is a 6.25 KHz wide channel.

16. (currently amended) A method of conducting communications between transceivers of a communication network, using a selected portion of a prescribed communication bandwidth containing a plurality of sub-bandwidth communication channels, said method comprising the steps of:

(a) at a master site transceiver, transmitting a clear channel assessment message that is detectable by each of remote site transceivers;

(b) at each remote site transceiver, receiving said clear channel assessment message and, in response thereto, scanning said prescribed communication bandwidth for effective communication activity on said sub-bandwidth communication channels, and identifying which of said sub-bandwidth communication channels appear to said each remote site transceiver to be absent effective communication activity and thereby constitute clear channels available for use;

(c) at each remote site transceiver, transmitting a message to said master site transceiver containing information from which said clear channels may be identified at said master site transceiver and coupling identifications of selected ones of said clear channels identified to a modulated filter bank containing an inverse fast Fourier transform operator and a polyphase filter, and deriving therefrom a plurality of carrier frequencies respectively corresponding to said selected ones of said clear channels ~~and processing identifications of clear channels within a modulated filter bank to derive carrier frequencies corresponding to selected ones of clear channels;~~

(d) at said master site transceiver receiving messages transmitted from remote sites in step (c), compiling an aggregate list of clear channels as identified in said received messages, and transmitting to each remote site transceiver a clear channel usage message representative of said aggregate list; and

(e) causing said master site and a remote site transceiver to conduct communications therebetween using said selected ones of said clear channels of said aggregate list.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

Claims 1, 10, and 16, are allowed. The prior art discloses conducting communications between a master and plurality of remote site transceivers of a

communications network using a selected portion of a prescribed communication bandwidth containing a plurality of sub-bandwidth communication channels.

The prior art however fails to disclose plurality of remote site transceivers identifying channels being absent communication activity as clear channels and processing identifications of clear channels within a modulated filter bank containing an inverse fast Fourier transform operator and a polyphase filter, and deriving therefrom a plurality of carrier frequencies respectively corresponding to selected ones of said clear channels and further where a master site transceiver being operative to compile an aggregate list of clear channels identified by said plurality of remote site transceivers and to transmit a message to said plurality of remote site transceivers containing information representative of said aggregate list of clear channels and wherein said master site transceiver and a remote site transceiver are operative to conduct communications there between using said selected ones of said clear channels contained in said aggregate list.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAJ K. JAIN whose telephone number is (571)272-3145. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Application/Control Number:
10/730,753
Art Unit: 2616

Page 7

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raj K. Jain/

Primary Examiner, Art Unit 2616

July 15, 2008